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# SPACE WEAPONS AND INTERNATIONAL LAW

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There is but one law for all, namely that law which governs  
all law, the law of our Creator, the law of humanity,  
justice, equity – the law of nature and of nations.  
– Edmund Burke, *Impeachment of Warren Hastings*, 28 May 1794

Life's but a walking shadow, a poor player,  
That struts and frets his hour upon the stage  
– Shakespeare, *Macbeth*, V, 16

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## THE CURTAIN LIFTS

Two world powers were poised on the edge of a future fraught with promise and danger. Exploration and exploitation were the keys to success. Competition or cooperation was the decision to be made. Competition was the normal, accepted route. But, the drain on limited resources would be too much if discovery was to be a race. Additionally, the "winner" would have to contend with other players preparing to enter the race – players of growing capabilities and maturing power. The choice was cooperation.

The year was 1494. The two powers, Spain and Portugal, signed the Treaty of Tordesillas to settle conflicts over lands explored by Columbus and other late 15th century explorers.<sup>1</sup> Unfortunately, the effect was limited by the refusal of other Europeans (Dutch, French, English) to accept a legal regime establishing Spanish or Portuguese claim to any undiscovered territories. The treaty was an obstacle to all, except the cosigners.

### SCRIPT WRITING

This early attempt at imposing international law is informative in a number of ways. It was advantageous to the cosigners because it made their world less complicated, increased their security by reducing potential conflict, and eased the expense of exploiting their new discoveries. It eventually failed because it created barriers that other nations had to break if they were to become players on the world stage. Thus, then as now, the problem and the goal was to create an environment of security for all nations without erecting barriers to the peaceful progress of any.

Today, the United States, the Soviet Union, and a number of other less accomplished but aggressive states face the prospect of exploring and exploiting the vast reaches of

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<sup>1</sup> Dos Passos, John, The Portugal Story: three centuries of exploration and discovery (New York: Doubleday, 1969) 55-65.

space. Of these contenders, the United States is in a unique position to shape the nature of all future competition and/or cooperation in space. The choices to be made all involve the relationship of space to the security of the United States and the rest of the world. The questions must be asked now because now is the time when the US and the USSR stand ready to develop and deploy weapons that can be used earth-to-space, space-to-space and space-to-earth.

### **NEW STAGE DIRECTIONS**

Currently, the initiative to create ground rules lies with the US because the collapse of the bi-polar world structure and embryonic nature of the predicted multi-polar structure leaves the U.S. as the world's single most influential state. Concurrently, recognition of the capacity of weapons to disrupt as well as secure peace, to destroy as well as protect economies adds to the fortuitous timing to create a regime advantageous to all future space explorers. The focus of this paper is, given the current international environment, how might international law influence the weaponization of space? Before describing specific possibilities, it is important to stress certain elements of international law and the status of space law.

## **THE DEVELOPMENT OF INTERNATIONAL LAW**

At its most basic, international law is a set of principles and rules acknowledged by sovereign states.<sup>2</sup> It's "tacit" when a state simply conforms to practices acceptable in international relations, and "express" when embodied in treaties. To appreciate its application, a quick look at its roots will help.

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Historically, the powerful city-states of classical Greece found inter-group rules unnecessary, because spheres of influence tended to be local and serious conflict was resolved through force of arms.

### **THE NEED ARISES**

In the Middle Ages, interest in codes for regulating intergroup behavior developed along with trading towns and leagues to protect trade, and citizens engaged in trade. In the 11th and 12th centuries, compilations of reasonable rules and court judgements were adopted as common codes of conduct by traders along the Atlantic and Mediterranean coasts of Europe.

While the spread of trade on the seas made international maritime law necessary, the development of law on land lagged. Most feudal groups were too small and poor to worry much about external relations, and major disputes were referred to the Roman Church for arbitration. However, consolidation of states and the rise of monarchies began to weaken centralized "superior" law based on religious legitimacy.

### **A NEW ORDER**

In the 15th and 16th centuries, three movements profoundly influenced the development of international law. First, the Renaissance produced an explosion of civilization through the international spread and linkage of ideas. With it arose the conviction that Christian principles should unite the world and be observed in matters international as well as national. Second, the Reformation weakened the Roman Church and the Holy Roman Emperor as supra-national arbiters of conflict. Third, the discovery of America expanded European trade and the need for international trade regulations to



the Western Hemisphere.<sup>3</sup>

Into the world created by the Renaissance, Reformation, and Age of Discovery, stepped Hugo Grotius, a 17th Century native of Delft. With his 1625 "De Jure Belli ac Pacis," Grotius became the father of modern international jurisprudence by laying out a unified structure of its basic concepts.<sup>4</sup> Of prime importance was his assertion that nations were bound by natural laws, that is, laws based on the nature of man and not on religion or politics.

This look at history provides two insights. First, international law derived from the economic need to ease and protect commerce and trade. Second, international law must be based on the nature of man. Ignoring basic human drives such as survival, security, and progress dooms such law to failure.

## **THE NATURE OF INTERNATIONAL LAW**

To refine the concept of international law, it is necessary to examine sources (natural law, custom, and treaty) and the impact of the underlying concept of sovereignty.

### **NATURAL LAW**

The revival of Christian ethics in the 15th to 17th centuries produced the concept of natural human rights. In general, those rights consisted of self-preservation, society, and community. The last two rights recognized the beliefs that man is a social animal and requires the love of others to thrive. Grotius contended that the legitimacy of states related to these rights. He concluded that states should provide social order, that laws

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<sup>3</sup> Finch, George A., The Sources of Modern International Law (Washington: Carnegie Endowment for International Peace, 1937) 3-14.

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are for the good of society and not individuals (such as kings), that social order should be maintained upon principles of right reason, and that there exist general principles of justice, fairness, and good sense based on custom and practice.<sup>5</sup> The idea of natural rights was finally extended to states themselves as the concept of a world community of sovereign states evolved. Today, a basic ground rule for any state is that it enjoys the same natural rights and liberties as individuals, limited only by the equal rights of all other states in the world community. Thus, international law is the system of rules the world community accepts to assert and preserve those rights.

### CUSTOM

The second source of international law, custom, is the most nebulous. Traditionally, the definition of custom includes long and consistent usage, support by literature, compliance with the ethics of the community, and belief that it is the exercise of a right by those who practice it.<sup>6</sup>

With the explosion of technology, long and consistent usage has been replaced by a more rapid mechanism. Through this mechanism, a technological achievement (for instance, satellite communications) results in a precedence-setting action, the community accepts the actions, and follow-on actions to employ the technology convert the precedent into "instant custom". This is advantageous to the precedent setters but overemphasizes technological momentum and discounts the views of less technically capable states.

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<sup>5</sup> Finch 21-23.

<sup>6</sup> D'Amato, A., The Concept of Custom in International Law (Ithica: Cornell University Press, 1971).

## **TREATY**

The last source of international law is treaties, which are usually signed to explicitly apply a natural law or custom by:<sup>7</sup>

- a. defining or modifying mutual duties and obligations,
- b. securing observance of generally accepted rules,
- c. securing abandonment of unjust or oppressive practices,
- d. obtaining general acceptance of improved methods of action or desirable reforms.

Because of their functionary nature, treaties can be legally abandoned for a number of reasons such as inability to perform, disappearance of an underlying circumstance, or another party refuses to abide. Likewise, treaties can be ended by a stated period of performance, stated options for withdrawal, completion of performance, or by mutual consent of the parties. Treaty violations tend to occur for the same reason as violations of natural rights and customs – a clash with the concept of sovereignty.

## **THE RIGHT OF SELF PRESERVATION**

Sovereignty is summarized as a state's inherent right to assume and exercise exclusive jurisdiction within its own territory. It is susceptible to no limitation not imposed by itself.<sup>8</sup> This concept is the result of extension to the state of the individual's natural right to self-preservation. Indeed, self-preservation is considered the first law of states and is the basis for all concepts of national security interests. The world community has never challenged the precept that no state has the right to dictate to another what its means of national security shall be.

But, the drive for sovereignty is the major stumbling block in the development of effective international law. Reaching agreements that are perceived as equally

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advantageous to the self-preservation of all parties is difficult. Successes, such as the Hague and Geneva Conventions, are chiefly due to their reciprocal nature, because all parties recognize that violations will only result in reprisals of, at least, the same nature and extent. The lesson of sovereignty is that successful international law increases world security through its observation and invites disaster if ignored.

## **THE ROOTS OF SPACE LAW**

Given the nature and sources of international law, and the importance of sovereignty, let us turn to the concepts underlying all current space law. In fact, space law has its roots in the laws of the sea and air, and is strongly influenced by both natural law and custom. Unfortunately, the roots are shallow.

### **LAW OF THE SEA**

The most influential and longest observed custom is that of free passage, derived from the Law of the Sea concept of the neutrality of the "high seas". But even the "high seas" concept is a recent development. It wasn't fully accepted until the 19th century, when the need for international waters for commerce was pressed and claims of sovereign ocean areas were proven hollow because of the inability of states to impose control.<sup>9</sup> However, national security dictated that at least coastal waters would remain sovereign to protect against naval artillery, and the width of sovereign coastal strips remained, until the mid-20th century, closely tied to the range of naval and coastal artillery.

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<sup>9</sup> Brierly, James L., The Law of Nations, 6th ed. (New York: Oxford University Press, 1963) 304-306.

## LAW OF THE AIR

In the late 19th century, the rapid development of wireless communication and aerial navigation established an urgent need for a body of law governing the air. Two opposing camps, one for total freedom and the other for total sovereignty, were quickly established.

The "total freedom" advocates' best argument was that the air should be free and at the disposition of all states with the caveat that each state could take actions necessary for national security. This caveat translated to acceptance of air traffic control to the altitude feasible with the technology of the day. Difficulties determining that altitude made this approach unworkable.<sup>10</sup>

The "sovereignty" camp argued two slightly different approaches. One approach was similar to the Law of the Sea, with a low altitude full-sovereignty zone analogous to territorial waters superimposed over high altitude free airspace. The other approach was full and unlimited sovereignty at all altitudes.<sup>11</sup>

Disregarding any measures of ability to control airspace, the full sovereignty arguments won the day and the Law of the Air forever diverged from the "high seas" concept underpinning modern Law of the Sea. The final argument was that since an aircraft at any height could strike the state below, full sovereignty of airspace was an obvious expansion of customary law based on states' natural right to self-preservation.<sup>12</sup> This approach was formalized in 1944 at the Convention of International Civil Aviation held in Chicago.<sup>13</sup>

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<sup>10</sup> Zollman, Carl, Law of the Air (Milwaukee: Bruce Publishing Company, 1911) 2.

<sup>11</sup> Zollman 2-3.

<sup>12</sup> Zollman 3-5.

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## **CURRENT STATUS**

### **PRINCIPLES REVISITED**

The discussed developments in international law can be summarized in several very important observations. First, international law is based on the nature of man as extended to states. Second, the most important natural right of a sovereign state is self-preservation. Third, successful international law enhances world security without erecting barriers to peaceful progress (reflecting its rise from the need to ease and protect commerce and trade). Fourth, compliance with modern treaties is most likely when violation will result in reciprocal acts of at least equal nature and extent. Last, technological momentum has created a new mechanism for establishing custom - precedence, followed by implicit acceptance by the world community, followed by exploitation by those states capable of the technology. This is the creation of "instant custom" through unopposed action.

Given the above, how far has Space Law progressed? Not very. It is obvious that the exploration and exploitation of space will only grow in intensity and scope, and that the relationship of space to mankind will be increasingly significant. It is equally obvious that laws to regulate the two other natural domains, air and sea, cannot be extended to space because of physical realities. Orbital mechanics make observance of sovereign areas linked to geographic boundaries, as in the Law of the Air, impossible. Likewise, the concept of the "high seas" holds little meaning because space objects, at least in earth orbit, can immediately and directly interact with nations below them.

### **DILEMMAS**

For space in general, the very physics of operations produces a strong natural tension between maintenance of security for self-preservation and freedom of use for peaceful

progress. Nowhere can a single state tilt the balance between use and security in its favor without affecting other states. Thus, by definition, space issues are universal. However, technologically advanced states have been extremely reluctant to hinder their ability to create "instant custom" by entering into formal agreements. The argument is that there is not sufficient information available to determine the exact ramifications of any commitment, and, therefore, any regulation or ordering of space activity would be premature.<sup>14</sup> Additionally, many less advanced states tend to believe that international agreements discourage their peaceful progress by hindering their chances to apply or oppose previously established "instant customs" through their own technological efforts.<sup>15</sup> But some headway has been made, and the current space treaties and international attitudes toward space exploration can inform us on the future possibilities.

The applicability of international law, that is, the concept that a legal regime in space is appropriate, is no longer challenged by any state in good standing with the world community. But questions abound pertaining to its mechanism. Who will shape it? Who will be bound by it? Who will administer it? So far, two approaches to define a legal regime by treaty have been successful - agreements worked out through, and administered by, supra-national organizations such as the United Nations, and agreements negotiated by individual states.

#### **UNITED NATIONS CONTRIBUTIONS**

The United Nations has been the principal location for formal public international

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<sup>14</sup> Crane, Robert D., Soviet Attitude Toward International Space Law (Durham: Duke University, World Rule of Law Center, 1962).

<sup>15</sup> Anand, Ram Prakash, Origin and Development of the Law of the Sea (Boston: Martinus Nijhoff Publishers, 1983) 135-136.

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efforts to develop a law of outer space. Starting in 1958,<sup>16</sup> the General Assembly has passed a number of resolutions establishing basic concepts for a space law regime. These concepts include: that international law, including the UN Charter, is applicable to outer space and celestial bodies; that outer space and celestial bodies are free for exploration and free from national appropriation; that principles such as state and corporate responsibility, ownership, and control be applied to the operation of space vehicles; and that arms control principles are applicable to space.<sup>17</sup>

In 1967 many of these concepts were incorporated in what is the basic document of current space law: the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space. (A summary of the 17 articles is at attachment 1.) Supporting treaties in 1968, 1973 and 1976 established principles of astronaut and space object control, liability and compensation for damage caused by space objects, and the registration of all space objects with the UN.

Aside from resolutions and treaty work, the UN is heavily involved in specific activity regulation through specialized agencies. For example, the International Telecommunications Union (ITU) regulates the use of communications frequencies, the spacing of communications satellites in orbit, and the use of the limited satellite locations in the equatorial geosynchronous orbit.

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<sup>16</sup> United Nations, General Assembly, Resolution 1348 (XIII), Question of the Peaceful Use of Outer Space, Dec 13, 1958. Rpt in Jasentuliyana, N., and Lee, Roy S.K., Manual on Space Law (Dobbs Ferry: Oceana Publications, Inc., 1981) 492.

<sup>17</sup> These concepts appear in a number of U.N. resolutions. Most applicable are General Assembly Resolution 1721 (XVI), International Cooperation in the Peaceful Use of Outer Space, Dec 20, 1961, General Assembly Resolution 1962 (XVIII), Declaration of Legal Principles Governing Activities of States in the Exploration and Use of Outer Space, Dec 13, 1963, and General Assembly Resolution 1884 (XVIII), Question of General and Complete Disarmament, Oct 17, 1963. Published in Jasentuliyana & Lee 493-496.

## **NATION TO NATION**

As for agreements by individual states, the most significant those concluded between the two major space powers: the United States and the Soviet Union. The 1963 Limited Test Ban Treaty, the Anti-Ballistic Missile Treaty of 1972, and the Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War all establish space exploitation parameters for enhanced mutual security.

## **THE RISE OF CONSORTIUMS**

In addition to formal treaties, international cooperation in space is also being increased by the development of consortiums to share the tremendous expense, technical expertise, and operational infrastructure required by today's complex space operations. Two types of consortium have become prominent, the government controlled multi-state, and the commercial multi-national.

Multi-state consortiums have existed since the formation of the European Space Research Organization (ESRO) in 1964. Today, ESRO's successor, the European Space Agency, the International Telecommunications Satellite Organization (Intelsat), and the International Maritime Satellite Organization (Inmarsat) are only a few of many international cooperatives that provide members with services and commercial opportunities they could not otherwise afford. Besides formal organizations, cooperation among states on individual flights has become the norm for many types of space operations. The Soviet Union's Intercosmos spacecraft and most U.S. Space Shuttle flights are two obvious examples of this trend to share capabilities among nations.

The formation of commercial multi-national teams to manage the finance, research, fabrication and operation of today's commercial space ventures has exploded. It would not be unusual to read that a Japanese satellite, built by an American firm, with major components from Germany and Italy, has been launched out of the ESRO launch facility

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at Kourou by the French, with insurance coverage provide by Lloyds of London. Clearly the commercial environment is one of cooperative exploitation.

## **THE INTERNATIONAL ENVIRONMENT**

The current environment is the primordial soup from which the future evolves. The final insight needed to propose possible future courses comes from the attitudes that states now have of the relation of space operations to the natural rights and customs that form the basis for international law.

The shock of the 1957 launch of Sputnik I produced an outpouring of official opinions on the proper use of space.

### **THE US APPROACH – PEACE AND SECURITY**

From the dawn of the space age to the present time, U.S. attitudes toward space exploration have been simple and consistent. As espoused by the U.S. Congress in 1958, "it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind."<sup>18</sup> In agreement with the natural right of self-preservation, the term "peaceful purposes" in the American lexicon has always included military measures required to ensure the security of the nation and its endeavors. Such measures have variously been described as "self defense",<sup>19</sup> military actions that are "non-aggressive",<sup>20</sup> or missions such as surveillance and reconnaissance

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<sup>18</sup> U.S. Congress, Public Law 85-568, National Air and Space Act (Washington DC: n.p., 1958) Section 102(a).

<sup>19</sup> American Bar Association, Committee of the Law of Outer Space, Annual Report of the American Bar Association, vol. 84 (Miami Beach: n.p., 1959) 176.

<sup>20</sup> United Nations, First Committee, Address by U.S. Senator Albert Gore, Dec 3, 1962 (New York: United Nations, 1962).

that contribute to an "open world".<sup>21</sup>

Regardless of specific definition, U.S. space policy rests on the two basic international law concepts of the natural right of self-preservation and the rejection of barriers to peaceful progress. The latest U.S. National Space Policy reiterates this in its first "principle" for space activity conduct: "The United States is committed to the exploration and use of outer space by all nations for peaceful purposes and for the benefit of all mankind. 'Peaceful purposes' allow for activities in pursuit of national security goals."<sup>22</sup>

### **THE RUSSIAN APPROACH – POLITICS AND SECURITY**

The attitudes of the other major space power, the Soviet Union, have been much more difficult to discern. From the Bolshevik Revolution until about 1930, the Soviets rejected all international law as inhibiting social progress.<sup>23</sup>

In 1935 the Soviet Union began an evolution of thought that led to a concept of Socialist International Law based on "peaceful coexistence". It was to be a transitional institution to replace international law until the triumph of world communism eliminated the need for an international regime.<sup>24</sup> Of course, "peaceful coexistence" is now understood to be the intense but non-violent struggle by communism to gain advantage over capitalism. Historically then, the Soviet view of international law is fundamentally different from the Western view. For Moscow, it is a political tool rather than the embodiment of natural laws and customs.

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<sup>21</sup> The David Davies Memorial Institute of International Studies, Draft Code of Rules on the Exploration and Uses of Outer Space (London: Thorney House, n.d.).

<sup>22</sup> White House, Office of the Press Secretary, United States National Space Policy, Nov 2, 1989 (Washington DC: n.p., 1989) 1.

<sup>23</sup> Levin, D.B., "The Main Trends of Contemporary Bourgeois Science of International Law," Sovetskii Ezhegodnik (1959).

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### CONVERGENCE OF ATTITUDES?

However, there are two rays of hope. First, the concept of sovereignty provides common ground. Despite the ideological goal of a stateless society, the Soviet Union has pushed hard to establish a centralized state with recognized frontiers and an administrative system based on territorial control.<sup>25</sup> The language of self-preservation is thus well understood.

Second, Soviet President Gorbachev may be in the process of reorienting the Russian view of the world community and the purpose of international law. In 1986 he began a major ideological battle over the Soviet role on the world's stage. Beginning with Lenin's concept of priority of social development over all human values, he went on to say that in the nuclear world, the "all-human value of peace" perhaps takes priority over all others to which different people are attached. The suggestion that human values take priority is closely linked to another Gorbachev argument that the world is increasingly interdependent. In his view of an interdependent world, it is cooperation in defense of universal values, not the conflict between capitalism and socialism, that is at the heart of international relations.<sup>26</sup> If these new Soviet ideas hold, both major space powers will have converging views of the utility and purpose of international law.

### AN UPHILL BATTLE

In assessing Soviet attitudes, a brief look at their concepts of air and space law is also useful. As could be guessed from the discussion of sovereignty, the Soviet Union fully

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<sup>25</sup> Grzybowski, Kazimierz, Soviet Public International Law (Durham: Duke University Rule of Law Press, 1970).

<sup>26</sup> All assertions on President Gorbachev's philosophy in the preceding lines are from: Holloway, David, "Gorbachev's New Thinking," Foreign Affairs 68 (1989) 70-71.

embraces the Western concept that every state has complete and exclusive sovereignty over the airspace above its territory.

As for the extension of airspace rules to outer space, some curious twists occurred in the late 1950s. Two weeks after the launch of Sputnik 1, a leading Soviet jurist suggested that sovereignty did not extend above the maximum ascent ceiling of present-day aircraft; the limit of effective air control.<sup>27</sup> However, this position was abandoned after the launch of the 4th U.S. satellite, and declared completely untenable after launch of the 6th U.S. satellite.<sup>28</sup> Another policy declared immediately following Sputnik 1, and abandoned within three years, was that any declaration of a right to control space over a nation was senseless.<sup>29</sup>

The abandonment of both policies was probably related to a third concept developed in the late 1950s - that the Soviet Union had the right to take military action against encroachments to its sovereignty from outer space. The reasoning followed was that overflights by U.S. reconnaissance satellites violated sovereignty, such violations were acts of aggression, therefore attacking those satellites were legal acts of self defense.<sup>30</sup>

While general Soviet attitudes sound rather hostile, the main point is that the Soviets historically have based the legality of aerospace activities upon political and ideological evaluations. They have completely opposed the idea of a conceptual identity for outer

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<sup>27</sup> Zadorozhnyy, G.Y., "The Artificial Satellite and International Law", Sovetskaya Rossiya 17 Oct 1957. Rpt. in 87th Congress, Senate Committee on Aeronautical and Space Sciences, Legal Problems of Space Exploration, a Symposium (Washington DC: U.S. Government Printing Office, 1961) 1047-1049.

<sup>28</sup> Osnitskaya, G.A., "International Legal Problems of the Conquest of Space", 1959 Soviet Yearbook of International Law (1960).

<sup>29</sup> Kovalev, F.N. and Cheprov, I.I., "Artificial Satellites and International Law", 1958 Soviet Yearbook of International Law (1959).

<sup>30</sup> A reasonable summary of this reasoning can be found in Zhukov, G.P., "Space Espionage Plans and International Law", International Affairs Oct 1960 (Moscow). Rpt. in 87th Congress, Senate Committee on Aeronautical and Space Sciences, Legal Problems of Space Exploration, a Symposium 1095-1101.

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space that would divorce it entirely from terrestrial political and military realities.<sup>31</sup> Therefore, if President Gorbachev succeeds in adjusting the basic focus of Moscow's politics, the Soviet Union's approach to space law must follow suit.

### **SUPPORTING ACTORS**

As for the remaining Western space participants, and Japan, their attitudes tend to mirror those of the United States, with perhaps a more liberal approach to space community cooperation for peaceful progress.

For the Third World space participants, some slightly different considerations apply. While they, too, are interested in security, it is in terms of economic and social security rather than military. Access to space for peaceful progress is the primary issue. While most Third World countries accept the tenets of modern international law (increasing security and supporting peaceful progress), most are wary of signing treaties, or accepting "instant custom", because they feel these are codifications of the status quo, dependent on and perpetuating the capabilities of the superpowers.<sup>32</sup> In general, these states favorably receive concepts limiting the more powerful states' ability to control or regulate space activity, and oppose concepts perceived as restricting their own access to, or use of, space. Of special note is that, except for some equatorial states claiming jurisdiction over sections of the geosynchronous orbit, most Third World states reject extension of airspace controls into space.

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<sup>31</sup> Crane, R.D., Soviet Attitudes Toward International Space Law (Durham: Duke University Rule of Law Center, 1962).

<sup>32</sup> For explanations, see Cohen, J.A. and Hungdah Chiu, People's China and International Law (Princeton: Princeton University Press, 1974) 3-11., or Anand, R.P., "Development of a Universal International Law." The Search for World Order. Ed. Lepawsky, Buehrig, and Lasswell. New York: Appleton-Century-Crofts, 1971.

## **ATTITUDE CHECK**

Today's space law environment thus consists of the following general positions:

a. The United States believes in space use by all states for peaceful purposes, and supports laws that will not hinder national security or peaceful progress. Defensive, non-aggressive military activity is not precluded.

b. To the Soviet Union, space is an extension of the terrestrial environment, subject to the same political and military realities associated with the continuing struggle between capitalism and socialism. President Gorbachev may move Moscow's viewpoint closer to that of the U.S., but deep-seated concern over threats to sovereignty will make that move difficult. The Soviet space operations doctrine incorporates military defensive measures including pre-emptive attack.

c. Other advanced nations espouse beliefs parallel to those of the U.S., with less concern over security and more emphasis on economic/social exploitation (peaceful progress).

d. The Third World rejects laws that codify status quo or hinder possible access to, or use of, space. Military space activities of any kind are typically viewed as dangerous.

## **FUTURE PATHS**

This now brings us to the initial question - how might international law effect the weaponization of space? I have mentioned several themes throughout this paper that bear repeating:

a. Historically, international law resulted from the need to control the environment for protection of trade and commerce.

b. Laws that ignore basic human drives such as survival, security, and progress will

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a. Historically, international law resulted from the need to control the environment for protection of trade and commerce.

b. Laws that ignore basic human drives such as survival, security, and progress will

fail. International law must be based on these drives, extended to states.

c. The most important natural right of a sovereign state is self-preservation.

d. Successful laws increase world security by their observation and invite disaster if ignored.

e. Successful laws enhance world security without erecting barriers to peaceful progress.

f. In today's technologically driven world, the creation of "instant custom" through action is an important source of law.

### A TIME TO SOW

The current world community environment encompasses several significant breaks with the past. From World War II until very recently, the world operated within a bi-polar security structure built on the successful stand-off between two ideologically opposed camps. The West wove its international relations fabric to contain what was believed to be real and active aggression by a monolithic enemy bent on world domination. The East, in turn, wove to defend its social vision and historical destiny from the capitalist wolves entrenched, in mighty array, at its very doorsteps. The camp leaders, the United States and the Soviet Union, were perceived as superpowers with the measure of choice being military strength, most importantly, nuclear strength. Thus, all discussions of security and self-preservation emphasized the military balance.

The perception today is that the bi-polar world structure is in fast decline. The USSR is in economic disarray and has embarked on a painful and probably long road to the social restructuring needed to function effectively. The Eastern camp has disintegrated and many members have abandoned the camp's doctrines to pursue security and peaceful progress on their own terms. In the West, the United States remains powerful but is increasingly troubled by declining economic strength and a weakening of its ability to



control Western policy. The Western camp members are pursuing new coalitions aimed more at developing regional (Europe, Pacific Basin) structures than maintaining an East/West balance. The emerging and developing states of the world are demanding integration in the world's economy, and the web of interdependence requires the advanced states to listen.

### **THE VALUE OF WEAPONS**

Both the East and West Blocs recognize that massive or highly destructive military forces drain their economies and generate tension. The reduction of excessive conventional force levels is already underway. Even the main pillars of the bi-polar security structure, nuclear weapons, are increasingly regarded as irrelevant except for the reciprocal deterrence against their own use. The massive stockpiles of nuclear weapons are certainly recognized as destabilizing and counter-productive, and a move toward establishing minimum sufficiency is underway in this area also. This is not meant to convey that the military aspect of self-preservation has disappeared. The point is that we live in a period marked by shifting perceptions of the relative utility of the tools (military, economic, diplomatic, legal, social, ideological) used to achieve security and peaceful progress.

A world community growing undeniably interdependent heralds an essential change in scenery on the world stage. More and more, tools for cooperation rather than competition are required for progress, especially in the efforts to explore and exploit space. The military tools we build for the future must be in harmony with the new scenery or they will surely cause discord. The change is marked by the types of questions now being asked about military forces. The old questions revolved around efficiency, technical capability and required numbers. The new questions are more basic and address the very nature of weapons. Will they destabilize world security? Are they more threatening

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than they are worth? Are they too offensive? Will they fuel expensive arms races? Can proliferation be controlled? Are they too easy to use?

With the emerging environment laid out, the three types of potential future space weapons (earth-to-space, space-to-space and space-to-earth) can now be examined.

### **ATTACKING SPACE FROM EARTH**

Earth-to-space weapons have the dubious distinction of already existing in rudimentary form. The Soviet Union has tested and deployed limited systems for both anti-satellite (ASAT) and anti-ballistic missile (ABM) use. The United States has successfully developed both types of systems and reasonably tested an ABM capability, but currently has no systems deployed.

Because of their direct effect on the superpower's nuclear deterrence equation, ABM systems are considered destabilizing. One argument is that if ABM systems are deployed asymmetrically, and the better system can eliminate or minimize damage from attack, then the owner of the better system may feel less constrained in initiating nuclear attack. Or, the owner of the inferior system may feel forced to attack before the opposing system renders the threat of attack meaningless. A third scenario is that ABM systems force both sides into a new weapon-building race to saturate any defense and keep the nuclear advantage with the offense. This scenario leads to economic ruin because sufficiency, either offensive or defensive, is never reached. Lastly, symmetrical deployment of good systems could lower the threshold for nuclear use by decreasing the probability of massive destruction. These drawbacks were recognized by the superpowers in a 1972 treaty to limit deployment of such systems.

Beyond the special problems faced by the superpowers, ABM weapons have many pluses and, as non-nuclear ballistic missiles proliferate, proliferation of ABM technology is also likely to occur. In that case, ABMs would add to the overall security of the world

community by providing a means of sovereign self-preservation using a strictly defensive weapon. However, economic problems could still occur from ABM-fueled arms races. Additionally, a psychological increase in the tendency to use force could occur to leaders possessing an excellent missile defense. Near term, international law with these systems will continue to focus on the superpower nuclear deterrence case.

Anti-satellite systems do not directly effect the destructive balance of the superpower nuclear stand-off, but destabilize by threatening satellites needed to carry out nuclear operations or assess nuclear weapon deployment or status. Such destabilization was partially recognized by the 1972 ABM treaty, when both sides pledged not to interfere with "national technical means" of weapon status determination.

Because of the single-sided deployment and the apparent Soviet incorporation of ASAT use in war planning<sup>33</sup>, attempts to control deployment or use by treaty will not succeed until reciprocal capability can be established. Unfortunately, reciprocity will be difficult for the U.S. because of the Soviets' lesser dependence on space systems, their more robust satellite constellations and reconstitution capabilities, and their existing ASAT infrastructure. Therefore, as soon as reciprocity of any kind can be established, it would be wise to seek treaty control to limit a further ASAT race. The goal would be to allow some deployment to satisfy critical needs of self-defense against threatening satellites, while avoiding a weapon buildup that could destabilize security by their offensive potential. Ideally, this would gain security without raising barriers to peaceful progress.

#### **DEMAND-SIDE LOGIC**

A second approach to explore would be agreements to limit or ban deployment of provocative satellite systems. The category of "provocative" would include satellites

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<sup>33</sup> Radziyevskiy, A.I., senior ed. Dictionary of Basic Military Terms (Moscow: Voenizdat, 1965). Rpt. in USAF, Soviet Military Thought No 9 (n.d.) 109, 177.

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that could decide terrestrial conflicts by directly attacking terrestrial forces (such as space-to-earth weapons) or by significantly improving the effectiveness of terrestrial offensive forces (such as real-time targeting systems). Of course, most space systems (weather, communication, navigation, reconnaissance) aid terrestrial forces to some degree. But a line can be drawn between systems that still depend on the perceptive use by forces and commanders for efficacy and systems that, on their own, establish a new level of efficacy. The challenge for negotiators would be defining what was obviously above the line. Limits or bans on provocative systems, coupled with extension of non-interference agreements to cover all remaining systems, would further the concept of peaceful use and enhance world security by reducing interest in ASAT weapons worldwide. This approach would influence decisions on the need for deployment of all types of space weapons.

The non-superpowers have cause for worry if an unbalanced Soviet ASAT system remains, or the U.S. and U.S.S.R. enter an ASAT race. In the first case, there is little to restrain the Soviets from using their ASAT against a non-U.S. satellite if attack appears politically, militarily, or otherwise beneficial. In the second case, the existence of large ASAT arsenals would increase the potential for use, and in a large scale space campaign even untargeted satellites may not escape collateral damage. For these states, all ASATs represent threats to peaceful progress and any deployment must be balanced and controlled. As these states increasingly depend on space systems for their well being, launch more valuable satellites, and expand investment of their futures in space exploitation, their need to see ASAT controls will become more acute. The control of ASAT levels to lock them into defensive roles and deter casual use would advance worldwide confidence in peaceful progress in space.

## ATTACKS IN SPACE, FROM SPACE

The case of space-to-space weapons is similar to that of the earth-to-space ASATs, with some important exceptions. First, the difference between defensive and offensive capability is non-existent. Second, operational and physical constraints would most likely lead to system designs that need little pre-use preparation, and thus give no warning of attack. Finally, any space-to-space weapon has the potential for space-to-earth use, with all the direct threat to national security and sovereignty which that entails.

Because space-to-space weapons can easily deny both access to and the exploitation of space, international law principles would lead most states to view them as illegal barriers to peaceful progress and direct threats to the security of national resources. Unless umbrella protection of space assets by either the U.S. or U.S.S.R. is available (unlikely if protection of an ally means reciprocal action against a high value satellite belonging to the protector), space-to-space ASAT deployment may fuel the acquisition of similar technology worldwide to deter attack.

Due to their easy characterization as offensive, first deployment would be difficult to harmonize with the stated policies of either the U.S. or Soviet Union. In the case of first deployment by either side, immediate efforts to achieve reciprocity would be expected. But, determining true balance could be difficult because of the relatively more able system the U.S. would have to field to place the robust Soviet systems at equal risk. If little warning of attack is a mutual design feature, the U.S. could also find itself at a political disadvantage in crisis control because of the Soviet doctrine of defensive pre-emptive strike.

Steps can be taken through international agreement to enable some community acceptance if deployment is felt useful in nuclear missile defense. As an example, technological limits could be imposed to severely restrict use against terrestrial targets.

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Or, system design could require an easily recognized and slowly-paced preparation sequence to allow for crisis control prior to actual attack. Agreed limitations on the spectrum of potential targets would also help, as would limitations on numbers of deployed weapons. While probably never saleable as adding to world security, minimizing the destabilizing effects of space-to-space weapons could be achieved through controlled and open deployment. Such deployment should emphasize defense, minimize offensive usefulness, and minimize the temptation (or probable success) of casual use.

### **ATTACKING EARTH FROM SPACE**

In the case of space-to-earth weapons, little can be done to make their deployment at all harmonious with the concept of peaceful use of outer space. They would totally destabilize world security by facilitating direct and immediate attack on all sovereign territory of every state beneath their orbital paths. Their ease of use would make them dangerously attractive as simple solutions to a plethora of thorny problems. The possibility of such use would invite pre-emption at low levels of conflict. As the ultimately provocative space system, they would ensure maximum worldwide effort to develop and proliferate ASAT systems capable of equal reciprocity. Finally, the threat of their use might encourage disproportionate reciprocal measures by states incapable of space operations but fully capable of, for instance, chemical or biological terrorism. The potential of space-to-earth weapons to immediately and dramatically escalate any crisis is presently incalculable but obviously enormous. It is difficult to imagine any measure of worth that would outweigh the negative impact of such weapon deployment.

## **CONCLUSIONS**

Can international law effect the weaponization of space? Emphatically, yes. Using the

principles discussed, in any space weapon deployment, the U.S. must decide not only that it is in line with our stated principle of peaceful and secure use of outer space, but that it also meets the broader requirements of increasing world security while not erecting barriers to peaceful progress. Second, consideration must be given to the potential establishment of counter-productive customs by encouraging others to deploy reciprocal systems. Last must be the determination that the worth of the system outweighs any possible instability or ill will its deployment generates.

For the three types of weapons considered there is a spectrum of answers, depending on the situation and the astute use of international agreement.

#### **THE USEFULNESS OF EARTH BASED WEAPONS**

In the case of earth-to-space ABM systems, the legal arguments in favor of defensive systems for self-preservation lend general support for use, but the special rules surrounding nuclear deterrence cloud deployment by the superpowers. For the earth-to-space ASAT, international law considerations point to the need for the U.S. to develop a system reciprocal to the Soviet ASAT before any meaningful control agreements can be achieved. Once grounds for control are established, any limitations on numbers, efficacy, range, targets, etc., would be welcome by the world community as enhancing overall stability through the limitation of offensive capabilities that threaten peaceful progress or require widespread development of similar systems in defense.

#### **IDENTITY CRISIS FOR SPACE-TO-SPACE**

In the case of space-to-space weapons, if they are deemed necessary for defensive purposes, the key to acceptable deployment may reside in international agreement on ways to reduce their offensive capabilities. For example, design constraints could be required that give adequate indications and warning of use. Other agreements to pursue

principles discussed, in any space weapon deployment, the U.S. must decide not only that it is in line with our stated principle of peaceful and secure use of outer space, but that it also meets the broader requirements of increasing world security while not erecting barriers to peaceful progress. Second, consideration must be given to the potential establishment of counter-productive customs by encouraging others to deploy reciprocal systems. Last must be the determination that the worth of the system outweighs any possible instability or ill will its deployment generates.

For the three types of weapons considered there is a spectrum of answers, depending on the situation and the astute use of international agreement.

#### **THE USEFULNESS OF EARTH BASED WEAPONS**

In the case of earth-to-space ABM systems, the legal arguments in favor of defensive systems for self-preservation lend general support for use, but the special rules surrounding nuclear deterrence cloud deployment by the superpowers. For the earth-to-space ASAT, international law considerations point to the need for the U.S. to develop a system reciprocal to the Soviet ASAT before any meaningful control agreements can be achieved. Once grounds for control are established, any limitations on numbers, efficacy, range, targets, etc., would be welcome by the world community as enhancing overall stability through the limitation of offensive capabilities that threaten peaceful progress or require widespread development of similar systems in defense.

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would be limitations on numbers, immunity of certain types of satellites, and the extension of U.S. or Soviet defense umbrellas to satellite systems of other states. Above all, agreements on design constraints should be pursued to distinguish space-to-space weapons from space-to-earth weapons.

### **THE SWORD OF DAMOCLES**

In the case of space-to-earth weapons, expected negative effects seem to far outweigh any potential use. As weapons with immediate and essentially uncontrollable access to every inch of every state below their orbital paths, they are the ultimate threat to state sovereignty. No state would feel or be safe from external coercion. Worldwide efforts to reestablish deterrence against such coercion would lead to a fundamentally unstable world security structure. International agreement to ban deployment should be the only consideration.

### **FOOD FOR THOUGHT**

In closing, three additional across-the-board pursuits are recommended for a more healthy legal regime in space. First, as mentioned in the discussion on earth-to-space ASATs, the definition and ban from deployment of provocative space systems would go a long way toward reducing anyone's need for space weapons. While admittedly difficult to define, classify and monitor satellite usage, any progress in determining legitimate military target in space would immensely aid in controlling the deployment and employment of space weapons.

Second, the development of technology to accurately and unobtrusively examine and characterize satellites is desperately needed. Broad programs to explore all avenues for such capabilities should become a major part of our space technology base. The viability of any legal agreement relying on the specific performance of the systems involved

depends directly on the ability to monitor and verify that performance.

Finally, as a community, the space-faring countries of the world should engage in serious efforts to reduce the secrecy surrounding many national space programs. The disingenuous duplicity surrounding most states' national security space systems does great damage to any possibilities for meaningful international agreements. To paraphrase a statement by President Bush at the Conference on Security and Cooperation in Europe, we must address the problem of mistrust in the military and security spheres and the risk of confrontation arising through miscalculation. We should lift the veil of secrecy from certain military activities and forces and thus contribute to a more stable environment.<sup>34</sup>

As stated earlier, the U.S. is in a unique position to shape the future use of space. A special advantage exists now because of the cooperative environments for both space exploitation and the negotiation of security agreements. The U.S. should make the commitment to establish a space regime of secure partnership according to, and through the use of, international law. The U.S. must establish its space policies with a clear view of the need to enhance world security without raising barriers to peaceful progress. The danger that irreparable security destabilization could result from sheer technological momentum is too great to do otherwise.

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<sup>34</sup> Statement by President Bush, 9 Mar 1989. Rep. in U.S. Department of State, Strengthening Stability Through Openness April 1989, 1.

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Treaty on Principles Governing the Activities of States  
in the Exploration and Use of Outer Space  
(summary)

ARTICLE I: Outer space, including the moon, shall be free for exploration and use by all states without discrimination of any kind. There shall be free access to all areas of celestial bodies.

ARTICLE II: Outer space, including the moon, shall not be subject to nation appropriation by any means.

ARTICLE III: Parties of the treaty shall carry on exploration and use of outer space in accordance with international law, including the UN Charter.

ARTICLE IV: Nuclear weapons or "any other kinds of weapons of mass destruction" shall not be placed in orbit around the earth, installed on any celestial bodies or otherwise placed in outer space. The establishment of military facilities, the testing of weapons, and the conduct of military maneuvers on celestial bodies is forbidden.

ARTICLE V: Astronauts shall be regarded as envoys of mankind in outer space. Any assistance required for their safety shall be rendered by any state. In case of emergency landing on any state territory, they shall be promptly returned to the state of registry.

ARTICLE VI: State parties to the treaty shall bear international responsibility for national activities in outer space whether they are carried on by governmental or non-governmental agencies.

ARTICLE VII: Launching states are internationally liable for damage to another state or its citizens incurred on earth, in air space, or in outer space.

ARTICLE VIII: Objects launched under the registry of a state party to this treaty are under the jurisdiction and control of that state in outer space, while on a celestial body, and upon return to earth. Such objects shall be returned to the registered state upon identification by that state.

ARTICLE IX: This article sets up international control over activity potentially harmful to peaceful use of outer space by all states (such as contamination).

ARTICLE X: This article establishes the concept of free observation of space objects.

ARTICLE XI: Parties to the treaty shall release to the Secretary-General of the UN "to the greatest extent feasible and practical" information on the nature, conduct, location, and results of activities in outer space.

ARTICLE XII: All equipment and installations on the moon and other celestial bodies shall be open to representatives of other states party to the treaty on the basis of reciprocity.

ARTICLE XIII: Launches by international organizations are subject to this treaty.

ARTICLES XIV through XVII: Provide for administration of this treaty.

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